





Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

# PURCHASE ORDER PO040873

**Supplier:** TWM001-VU  
TW Metals  
PO Box 933014  
Altanta, GA 31193-3014 USA  
Phone: 585 768 5600  
Fax: 585 768 5601

**Ship To:** 1270 Aberdeen Street  
Hawkesbury  
ON  
K6A 1K7 Canada  
Phone: 613-632-5200

**PO No:** PO040873  
**PO Date:** 8/29/18  
**Due Date:** 9/7/18  
**Purchase Order Revision:**  
**Revision Date:**  
**Ship-To Contact:** Lavoie, Chantal Phone: clavoie@dartaero.com  
**Via:** Ground  
**Pymt Terms:** Net 30  
**Freight Terms:**  
**Special Comments:**

E-MAILED  
AUG 29 2018

## Items

Line Item	Job	Part	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
1 AT		M304P0.675W.091		304/316 Pipe .675 OD x .091 Wall Thickness : MATERIAL: TP304/TP316 STAINLESS STEEL SEAMLESS PIPE AS PER ASTM A312/ASME SA312 receive ft	Firmed	-	9/7/18	60 ft	✓ 69.5 ft	60 ft	\$5.00/ft	\$300.00 SEP 10 2018
2 AT		M304TR0.750W.049		304 Round Tube .750 X .049W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft	Firmed	-	9/7/18	260 ft	✓ 260 ft	260 ft	\$2.579/ft	\$670.54 SEP 10 2018
3 AT		M6061T6T0.375W.058		6061-T6 Round Tube .375 X 0.058W : MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft	Firmed	-	9/7/18	60 pcs	✓ 60 ft	60 pcs	\$2.6404/pcs	\$158.42 SEP 10 2018

Items												
Line Item	Job	Part	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
4	✓	M6061T6T0.625W.065		6061-T6 Round Tube .625 X.065W : MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft	Firmed	-	9/7/18	60 ft	0 ft 160 ft	60 ft	\$3.1499/ft	\$188.99
Grand Total: \$1,317.96												

## Order Notes

CL

## Procurement Quality Clauses

- A005 right of entry
- A012 chemical and physical test report
- A016 personnel qualification
- A017 raw material identification (as applicable)
- A026 certification of material conformance
- A041 quality management system
- A042 part notification by supplier
- A043 retention of quality documents
- A048 counterfeit parts avoidance, detection, mitigation and disposition program
- A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit [www.dart aerospace.com](http://www.dart aerospace.com) for further explanation.

Plex 8/29/18 10:39 AM dart.lavoie.chantal



O'Neal High-Performance Metals Group

Packing  
Slip

ORDER NO.: 80956538 FROM: CHIC PAGE 1

CUST NUMBER: 1203820 NET WGT: 147.263 REQ.DATE: 09/07/18 CONFIRMED  
SOLD TO:  
DART AEROSPACE LTD  
1270 ABERDEEN ST  
HAWKESBURY ON  
CANADA CN K6A 1K7 SHIP TO:  
DART AEROSPACE LTD  
1270 ABERDEEN ST  
HAWKESBURY ON  
ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 08/31/18  
TERMS: NET 30 DAYS VIA: COMMON CARRIER  
F.O.B.: SHIPPING POINT FREIGHT: PREPAID  
CUST ORD NO.: PO40873 RELEASE NO.:  
RECEIVING PHONE:

LINE	ITEM DESCRIPTION	WIDTH	LENGTH
0001	38420 SMLS 304/L A-312 3/8 SCH 40		17/24 FT

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	60.000 FT	69.500 FT	69.500 FT	39.813	3

\*\* 1 TEST REPORTS REQUIRED \*\*  
\*\* 1 CERTS REQUIRED \*\*

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00  
PO:49383265 HT:11P046 AT PC: 3 CUSTOMER QTY: UOM  
MLT:CHINA MFG:CHINA SLB/CL:LWMK92

0002 36860 SMLS CD 304/L A269 3/4 OD X .049 WA 20' CL

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	260.000 FT	260.000 FT	260.000 FT	95.347	13

\*\* 1 TEST REPORTS REQUIRED \*\*  
\*\* 1 CERTS REQUIRED \*\*

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00  
PO:49370276 HT:N170711AS10 AT PC: 13 CUSTOMER QTY: UOM  
MLT:CHINA MFG:CHINA SLB/CL:-

0003 41952 D6061-T6 3/8 OD X .058 WA 12 FT ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	60.000 FT	60.000 FT	60.000 FT	4.068	5

\*\* 1 TEST REPORTS REQUIRED \*\*  
\*\* 1 CERTS REQUIRED \*\*

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00  
PO:49390065 HT:F002723160001 AT PC: 5 CUSTOMER QTY: UOM  
MLT:UNITED STATES MFG:UNITED STATES SLB/CL:226215



# **METALS**

O'Neal High-Performance Metals Group



## Packing Slip

ORDER NO.: 80956538      FROM: CHIC      PAGE 2

CUST NUMBER: 1203820    NET WGT: 147.263    REQ. DATE: 09/07/18 CONFIRMED  
SOLD TO: SHIP TO:  
DART AEROSPACE LTD DART AEROSPACE LTD  
1270 ABERDEEN ST 1270 ABERDEEN ST  
HAWKESBURY ON HAWKESBURY ON  
CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 08/31/18  
TERMS: NET 30 DAYS VIA: COMMON CARRIER  
F.O.B.: SHIPPING POINT FREIGHT: PREPAID  
CUST ORD NO.: PO40873 RELEASE NO.:

LINE	ITEM	DESCRIPTION	RECEIVING PHONE.	WIDTH	LENGTH
0004	42558	D6061-T6 5/8 OD X .065 WA			12 FT ML

CLN#	ORD QTY 60,000 FT	INVOICE QTY 60,000 FT	SHIPPED QTY 60,000 FT	WT 8.035	PCS 5
------	----------------------	--------------------------	--------------------------	-------------	----------

\*\* 1 TEST REPORTS REQUIRED \*\*  
\*\* 1 CERTS REQUIRED \*\*  
ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00  
PO:49389811 HT:F00271026000DAT PC: 5 CUSTOMER QTY: UOM  
MLT:UNITED STATES MFG:UNITED STATES SLB/CL:226182

BROKERS KUEHNE AND NAGEL LTD

----- PACK INFO -----  
 AREA TYPE OF PKG PKGS GRS WEIGHT WIDTH LENGTH HGHT  
 YRC REDDICRATE 1.000 84.000 3.0000 293.0000 3  
 CUBIC FT 1.5260  
 -----  
 1.000 84.000

BY: CS  
RT 000-

UNLOAD TYPE: NONE SPECIFIED

**DATE SHIPPED**

**THANK YOU FOR THIS ORDER**

**TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL REVIEW.**  
<http://www.twmetals.com/invoice-terms.html>



O'Neal High-Performance Metals Group



Packing  
Slip

ORDER NO.: 80956538      FROM: CHIC      PAGE 3

CUST NUMBER:	1203820	NET WGT:	147.263	REQ. DATE:	09/07/18	CONFIRMED
SOLD TO:	SHIP TO:					
DART AEROSPACE LTD	DART AEROSPACE LTD					
1270 ABERDEEN ST	1270 ABERDEEN ST					
HAWKESBURY ON	HAWKESBURY ON					
CANADA	ONTARIO CANADA					CN K6A 1K7
SALESPERSON:	CN K6A 1K7		SHIP BY:		08/31/18	
TERMS:	DONNA SMALLEY		235 TUBEWAY			
F.O.B.:	NET 30 DAYS		CAROL STREAM		IL 60188	
CUST ORD NO.:	SHIPPING POINT					
VIA:	PO40873					
FREIGHT:	COMMON CARRIER					
RELEASE NO.:	PREPAID					
RECEIVING PHONE:						

"TW Metals MSDS data is available on our web site at [www.twmetals.com](http://www.twmetals.com). MSDS data can be found under the Technical Resources Tab, Product Statistics & Data and the TW Metals MSDS's heading. If you do not have web site access you may telephone 610-458-1300 and we will mail or fax a copy of our current MSDS data to your location."

**"CERTIFICATE OF CONFORMANCE"**

"TW Metals certifies that the material supplied on this purchase order and contained in the heat/lot number referenced above has been manufactured, inspected, and tested in accordance with the material specification. These records are on file at TW Metals. Packaging material for shipments to Europe and China consists of manufactured wood products and complies with the European emergency measures for coniferous non-manufactured wood packing material"

**Electronically Generated Document-Valid Without Signature      Date: 8/30/18**

These commodities have been exported from the United States in accordance with the U.S. export control laws, export administrations regulations. Diversion contrary to U.S. law prohibited.

**THANK YOU FOR THIS ORDER**

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL REVIEW.  
<http://www.twmetals.com/invoice-terms.html>



CHANGSHU WALNSIN SPECIALTY STEEL CO.,LTD.

To# M40383265 At# 01/11/18  
MILL INSPECTION CERTIFICATE  
EN 10204 3.1

WLP-SRW-104038

**MILL INSPECTION CERTIFICATE**

EN 10204 3.1

**TA CHEN INTERNATIONAL, INC.**

MILL TEST REPORT

This MTR contains 1 page (Page# 1)

Customer: TWMEXT PO#:M49383265 SO#:LWMK92

MTR#:WLPSRW104038.GIF

Item:S44L00C Bundle:WLRW104TA82-12 Heat#:11P046

Item#:S44100C Bundle:WLRW104TA82-15 Heat#:11P046

# SPECIFICATION CONTROL DRAWING

D PURCHASE MATERIAL: TP304/TP316 STAINLESS STEEL SEAMLESS PIPE  
 SPECIFICATION: ASTM A312 / ASME SA312  
 PART NUMBER: M304P/D<sup>OD</sup>/W<sup>WT</sup>  
 WHERE "D" = OUTSIDE DIAMETER IN INCHES PER NPS DESIGNATION (REF TABLE 1)  
 AND "W" = WALL THICKNESS IN INCHES PER PIPE SCHEDULE (REF TABLE 1)

EG. 3/8 SCHEDULE 40 PIPE = M304P0.675W.091

TABLE 1: DIMENSIONS OF NPS PIPE (REF ANSI B36.10/19)

NPS Designation	Outside Diameter (in)	Pipe Schedule	
		SCHEDULE 40	SCHEDULE 80
1/8	0.405	0.068	0.095
1/4	0.540	0.088	0.119
3/8	0.675	0.091	0.126
1/2	0.840	0.109	0.147
3/4	1.050	0.113	0.154
1	1.315	0.133	0.179
1-1/4	1.660	0.140	0.191
1-1/2	1.900	0.145	0.200
2	2.375	0.154	0.218
2-1/2	2.875	0.203	0.276
3	3.500	0.216	0.300
3-1/2	4.000	0.226	0.318
4	4.500	0.237	0.337

RELEASED

2017 JUN 19  
 ECN 17-218  
 q

A	REV.	NEW ISSUE	DESCRIPTION	CP	CP	17.02.24
APPROVED	DESIGN	CP	CP	CP	BY	DATE
	DRAWN	CP	CP	ML		
	CHECKED			DD		
	MFG. APPR.			WM		
	APPROVED			DE APPR.		
				DATE	17.02.24	

DART AEROSPACE LTD  
 HAWKESBURY, ONTARIO, CANADA  
 DRAWING NO. M304P  
 TITLE 304/316 PIPE  
 SHEET 1 OF 1  
 SCALE NTS  
 COPYRIGHT © 2017 BY DART AEROSPACE LTD.  
 ALL RIGHTS RESERVED. THIS DRAWING IS THE PROPERTY OF DART AEROSPACE LTD. IT IS TO BE KEPT CONFIDENTIAL AND NOT COPIED OR DISSEMINATED EXCEPT AS AUTHORIZED BY DART AEROSPACE LTD.

B 7 4 5 6 3 2

1

B 8

3

2

## MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304P0.675W.091  
 DATE: 18/09/10

PO / BATCH NO.: P0040873/5108840

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 69.5 ft  
 QUANTITY INSPECTED: 69.5 ft  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.675"  
 THICKNESS RECEIVED: 0.675"  
 SHEET SIZE ORDERED: —  
 SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORRECT FINISH	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORROSION	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y <input type="radio"/> N	<u>ASTM A312</u>
CORRECT THICKNESS	<input checked="" type="radio"/> Y <input type="radio"/> N	
PHOTO REQUIRED	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y <input type="radio"/> N	<u>HT: 11P046</u>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y <input type="radio"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="radio"/> Y <input type="radio"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="radio"/> Y <input type="radio"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

*testers located in the Quality Office*

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>AJ</u>	SIGNED OFF BY: _____
DATE: <u>18/09/10</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# MTCO

## JIAXING MT STAINLESS STEEL CO.,LTD

### MILL TEST CERTIFICATE

EN10204 3.1 CERTIFICATE

ISO 9001: 2008 TUV SUD CERT REGISTRATION No.: 01 100 095954  
SALES CONTRACT NO.: M 49370276  
COMMODITY: STAINLESS STEEL SEAMLESS PIPE  
SPECIFICATION: ASTM A213-15c ASTM A269-15A, ASME SA213-15 AVG WALL

CERTIFICATE NO.: 17MTC-102310

SALES CONTRACT NO.: M 49370276

COMMODITY: STAINLESS STEEL SEAMLESS PIPE

SPECIFICATION: ASTM A213-15c ASTM A269-15A, ASME SA213-15 AVG WALL

Steel Grade	Heat No.	Dimensions			Chemical Composition (W.T. %)						Macroscopic Inspection
		O.D. (INCH)	W.T. (INCH)	Length (FT)	FT	Piece	Process	Delivery Condition	Annealed & Pickled & 320 Gm/min	Macroscopic Inspection	
TP304/304L	N170711AS10	3/4	0.049	20	5500	275	Cold-Drawn	Passed	Passed	Passed	Passed

### Mechanical Properties

Test Item	Y.S. (MPa) R <sub>n</sub> 0.2	T.S. (MPa) R <sub>m</sub>	EL. (%) In2in	Reduction of Area Z (%)	Hardness HRB	Cold Bend Test	Flaring Test	Flattening Test	P.M.I. TEST
Requirements	≤0.035	≤1.00	≤2.00	≤0.045	≤0.030	18.0-20.0	8.0-12.0	-	e=0.09
Test Results	0.017	0.34	1.32	0.027	0.001	18.13	8.01	-	-

### Non Destructive Tests

Test Item	Eddy Current Test	ASTM E 426	Passed						
Requirements	≥170	≥485	≥35	-	≤80	-	-	-	-
Test Results	260	625	55	-	76	Passed	Passed	Passed	Passed

### Remarks:

- ASTM A213-15c ASTM A269-15A, ASME SA213-15 AVG WALL
- PIPES TESTED PER ASTM A106
- SOLUTION HEAT TREATMENT 1050 °C X 15 min
- NO WELD REPAIR WAS PERFORMED
- PMI TESTING DONE ON EACH PIPE - SATISFACTORY
- IN COMPLIANCE WITH NACE MR0175/ISO 15156-2015
- FREE FROM MERCURY CONTAMINATION
- MATERIAL IS FREE FROM RADIOACTIVITY
- VISUAL CHECK IS SATISFACTORY
- COUNTRY OF ORIGIN: CHINA

1. WE HERE BY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN TESTED AND THE TEST RESULTS ARE IN COMPLIANCE WITH THE TERMS OF THE PURCHASE ORDER OR CONTRACT
2. THE CERTIFICATE SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF THE COMPANY.

Prepared by:

Approved by:



# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING  
 SPECIFICATION: ASTM A213 OR ASME SA213 OR ASTM A289

WALL THICKNESS TOLERANCE PER ASTM A289 AS FOLLOWS

OD (IN)	PERMISSIBLE OD TOL. (IN)	PERMISSIBLE WALL TOL.
UP TO $\frac{1}{2}$	$\pm 0.005$	$\pm 15\%$
$\frac{1}{2}$ TO $1\frac{1}{2}$ EXCL	$\pm 0.005$	$\pm 10\%$
$1\frac{1}{2}$ TO $3\frac{1}{2}$ EXCL	$\pm 0.010$	$\pm 10\%$
$3\frac{1}{2}$ TO $5\frac{1}{2}$ EXCL	$\pm 0.015$	$\pm 10\%$
$5\frac{1}{2}$ TO 8 EXCL	$\pm 0.030$	$\pm 10\%$

PART NUMBER

M304TR[D DDD W TTT]  
 OD | WALL

WHERE "D.DDD" = OUTSIDE DIAMETER IN INCHES  
 AND "TTT" = WALL THICKNESS IN INCHES

E.G. 0.375" OD X 0.065" WALL TUBING = M304TR 0.375W.065

RELEASED  
 01/06/23 AF

B	REFORMATTED, ADD SPECS [7N DR 1] REF PART NO RDA	CP 08 10 20
A	NEW ISSUE	DS 24 26 93
REV		Ex. DATE
DRAWING NO M304TR		
INSCRPTION TYPE 304/316 ROUND TUBING		
DART AEROSPACE LTD HAWKESBURY ONTARIO CANADA		
REV B SHEET 1 OF 1 SCALE NTS		
COMBINATION: 204 BY DART AEROSPACE LTD		
DATE 08 10 20		

## MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304TR0.750W.049  
 DATE: 18/09/10

PO / BATCH NO.: P0040873/S108841

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 260ft  
 QUANTITY INSPECTED: 260ft  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.750"  
 THICKNESS RECEIVED: 0.750"  
 SHEET SIZE ORDERED: —  
 SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="checkbox"/> <input type="checkbox"/> N	
CORRECT FINISH	<input checked="" type="checkbox"/> <input type="checkbox"/> N	
CORROSION	<input checked="" type="checkbox"/> <input type="checkbox"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> <input type="checkbox"/> N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> <input type="checkbox"/> N	<i>ASTM A213</i>
CORRECT THICKNESS	<input checked="" type="checkbox"/> <input type="checkbox"/> N	
PHOTO REQUIRED	<input checked="" type="checkbox"/> <input type="checkbox"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> <input type="checkbox"/> N	<i>HT. N170711AS10</i>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> <input type="checkbox"/> N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> <input type="checkbox"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="checkbox"/> <input type="checkbox"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="checkbox"/> <input type="checkbox"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

*testers located in the Quality Office*

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>AT</u>	SIGNED OFF BY: _____
DATE: <u>18/09/10</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



*Best in Class*

## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

CUSTOMER PO NUMBER:		CUSTOMER PART NUMBER:		PRODUCT DESCRIPTION:				
M49390065-1		41952		Drawn Seamless Tube/Pipe				
KAISER ORDER NUMBER:	LINE ITEM:		SHIP DATE:	KAISER LOT NUMBER:	ALLOY:	TEMPER:		
226215	001		06/19/2018	F00272316	6061	T6		
WEIGHT SHIPPED:	QUANTITY:	B/L NUMBER:		DIAM/DAF/THKNS:	WIDTH:	LENGTH:		
500.000 LB	616.000 PCS	230024				12.000 FT		
SHIP TO:	SOLD TO:							
TW METALS INC 235 WEST TUBEWAY DRIVE CAROL STREAM, IL 60188 USA	TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA							

### Actual Physical Properties

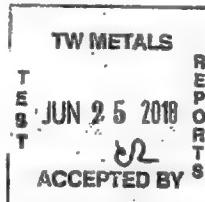
REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON%IACS	BEND
F00272316	0001	0001	48.3	40.5	18.5	N/A	N/A	N/A

### Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D21579	.58	.26	.22	.05	.96	.09	.05	.02	.00	.00	.00	.01	.02

### Applicable Requirements:

Description: OD: 0.3750"; Wall: 0.0580"; Round  $\ominus$   
 AMS4082P AMS-WW-T-700/6C ASTM B210-12  
 WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS4082P, WAS NOT OILED.  
 This Product Complies to FAR BAA, DFARS BAA, FAR TAA  
 COMPLIES TO DIN EN 10204 JAN 2005  
 No Weld Repair. Mercury Free.



### Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA  
 MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA  
 (DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5  
 TRADE AGREEMENTS).

Plant Serial: 00028687

Kaiser Order Number: 226215

Line Item: 001



*Best in Class*

## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

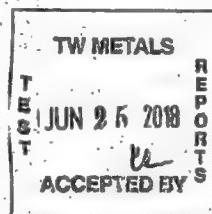
KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

### CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager

A handwritten signature in black ink, appearing to read "Hans Kattentidt".



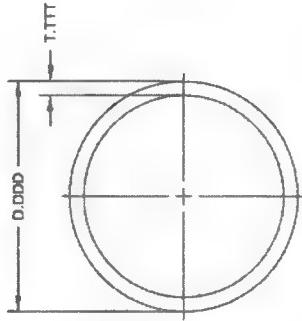
Plant Serial: 00028687  
Kaiser Order Number: 226215  
Line Item: 001

PURCHASE MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING  
 WHERE "T" = OD IN INCHES  
 WHERE "WALL" = WALL THICKNESS

SPECIFICATION:  
 OR QQ-A-2008 OR QQ-A-2258  
 OR AMS 4080 OR AMS 4082 OR AMS 4083  
 OR ASTM B210 OR ASTM B241

PART NUMBER:  
 M6061-T61D.DDDWWT.TTT  
 OD | WALL

MATERIAL TOLERANCE:  
 PER ANSI H352



RELEASED  
 2013-07-02

DRAFT AEROSPACE LTD			
HAWKESBURY, ONTARIO, CANADA			
C	COMPLETE REFORMAT, ADDED T6510 & T6511. ADDED AMS 4083, ASTM B210 & ASTM B241	A/S	13.06.12
B	ADDED MATERIAL TOLERANCE ADD QQ-A-2008 & QQ-A-2258	CP	04.01.23
A	NEW ISSUE	DS	01.06.21
REV.	DESCRIPTION	DATE	BY
DESIGN	A/S		
DRAWN	A/S		
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR			
DATE	13.06.12		

FOR DRAFT AEROSPACE LTD	REVIEWED BY DRAFT AEROSPACE LTD
REVIEWED BY DRAFT AEROSPACE LTD	REVIEWED BY DRAFT AEROSPACE LTD
REVIEWED BY DRAFT AEROSPACE LTD	REVIEWED BY DRAFT AEROSPACE LTD
REVIEWED BY DRAFT AEROSPACE LTD	REVIEWED BY DRAFT AEROSPACE LTD
REVIEWED BY DRAFT AEROSPACE LTD	REVIEWED BY DRAFT AEROSPACE LTD

## MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M606176T0.375W.050

PO / BATCH NO.: P0040873/S108842

DATE: 18/09/10

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 60ft  
 QUANTITY INSPECTED: 60ft  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.375"  
 THICKNESS RECEIVED: 0.375"  
 SHEET SIZE ORDERED: —  
 SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
CORRECT FINISH	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
CORROSION	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
CORRECT GRAIN DIRECTION	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
CORRECT MATERIAL PER M-DRAWING	X <input checked="" type="checkbox"/> N <input type="checkbox"/>	ASTM B210
CORRECT THICKNESS	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
PHOTO REQUIRED	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
CORRECT REF # TO LINK CERT	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	HT: E002723160001
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
CORRECT M# ON THE MATERIAL	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

*testers located in the Quality Office*

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>AJ</u>	SIGNED OFF BY: _____
DATE: <u>18/09/10</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



**CERTIFIED TEST REPORT**  
<http://Online.KaiserAluminum.com>

KAISER ALUMINUM  
 FABRICATED PRODUCTS, LLC  
 6573 W. WILLIS ROAD  
 CHANDLER, AZ 85226

CUSTOMER PO NUMBER:		CUSTOMER PART NUMBER:		PRODUCT DESCRIPTION:			
M49389811-1		42558-144		Drawn Seamless Tube/Pipe			
KAISER ORDER NUMBER:	LINE ITEM:	SHIP DATE:	KAISER LOT NUMBER:	ALLOY:	TEMPER:		
226182	001	06/05/2018	F00271026	6061	T6		
WEIGHT SHIPPED:	QUANTITY:	B/L NUMBER:	DIAM/DAF/THKNS:	WIDTH:	LENGTH:		
615.000 LB	382.000 PCS	229872			12.000 FT		
SHIP TO:				SOLD TO:			
TW METALS INC 235 WEST TUBEWAY DRIVE CAROL STREAM, IL 60188 USA				TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA			

### Actual Physical Properties

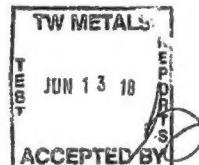
REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON% IACS	BEND
F00271026	0001	0001	46.5	39.3	21.5	N/A	N/A	N/A
F00271026	0002	0001	48.4	41.0	20.0	N/A	N/A	N/A

### Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D21580	.58	.27	.21	.05	.98	.09	.05	.03	.00	.00	.00	.01	.02
D21416	.60	.28	.23	.05	.95	.10	.06	.03	.00	.00	.00	.01	.02

### Applicable Requirements:

Description: OD: 0.6250"; Wall: 0.0650"; Round @  
 AMS4082P AMS-WW-T-700/6C ASTM B210-12 WW-T-700/6F  
 WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS4082P, WAS NOT OILED.  
 This Product Complies to FAR BAA, DFARS BAA, FAR TAA  
 COMPLIES TO DIN EN 10204 JAN 2005  
 No Weld Repair. Mercury Free.



### Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA  
 MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA  
 (DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5  
 TRADE AGREEMENTS).

Plant Serial: 00028537  
 Kaiser Order Number: 226182  
 Line Item: 001

# **KAISER**

## **ALUMINUM**

### **FABRICATED PRODUCTS**

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

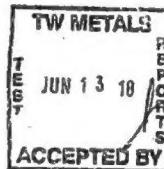
#### **CERTIFIED TEST REPORT**

<http://Online.KaiserAluminum.com>

#### **CERTIFICATION**

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentmidt, Quality Manager



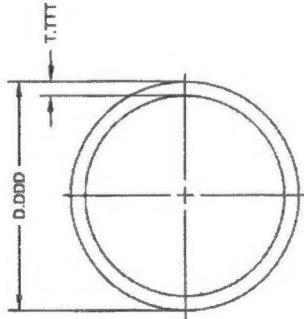
1  
2  
3  
4  
5  
6  
7  
8

D

C

B

A



PURCHASE MATERIAL: M6061T67ID:OD/WT:TWT

SPECIFICATION:  
WW-T-7008  
OR QQ-A-2008 OR QQ-A-2258  
OR AMS 4080 OR AMS 4082 OR AMS 4083  
OR ASTM B21/DOR ASTM B241

PART NUMBER:  
M6061T67ID:OD/WT:TWT

PART NUMBER:

WHERE "D.DDD" = OD IN INCHES  
"T.TTT" = WALL THICKNESS

EG. 3/8" OD X 0.058 WALL = M6061T670.375W0.058

PER ANSI H35.2

MATERIAL TOLERANCE:

**RELEASED**  
2013-07-02  
*[Signature]*

		COMPLETE REFORMAT ADDED TS510 & TS511.				
		ADDED AMS 4083, ASTM B210 & ASTM B241.				
		ADDED MATERIAL TOLERANCE				
C					AJS	13.06.12
B					CP	04.01.23
A					DS	01.06.21
REV.		DESCRIPTION			BY	DATE
DESIGN	AJS	DART AEROSPACE LTD	HAWKESBURY, ONTARIO, CANADA			
DRAWN	AJS					
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. C			
MFG. APPR.		M6061T67	SHEET 1 OF 1			
APPROVED			SCALE			
DE APPR.		6061-T6 TUBING	NTS			
DATE	13.06.12					

1

2

3

4

5

6

7

8

1

D

C

B

A

## MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M606176 TD.625W.065  
 DATE: 18/09/10

PO / BATCH NO.: P0040873/S108843

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 60ft  
 QUANTITY INSPECTED: 60ft  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.625"  
 THICKNESS RECEIVED: 0.625"  
 SHEET SIZE ORDERED: —  
 SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<u>Y</u> <u>(N)</u>	
CORRECT FINISH	<u>Y</u> <u>N</u>	
CORROSION	<u>Y</u> <u>(N)</u>	
CORRECT GRAIN DIRECTION	<u>Y</u> <u>N</u>	
CORRECT MATERIAL PER M-DRAWING	<u>Y</u> <u>N</u>	<u>ASTM B210</u>
CORRECT THICKNESS	<u>Y</u> <u>N</u>	
PHOTO REQUIRED	<u>Y</u> <u>(N)</u>	
CORRECT REF # TO LINK CERT	<u>Y</u> <u>N</u>	<u>HT: F00371026 0001</u>
CORRECT MATERIAL IDENTIFICATION	<u>Y</u> <u>N</u>	<u>2</u>
CORRECT M# ON THE MATERIAL	<u>Y</u> <u>N</u>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<u>Y</u> <u>(N)</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	<u>Y</u> <u>(N)</u>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>AT</u>	SIGNED OFF BY: _____
DATE: <u>18/09/10</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in